

Features

- Advanced high cell density Trench technology
- Super Low Gate Charge
- Excellent CdV/dt effect decline
- Green Device Available

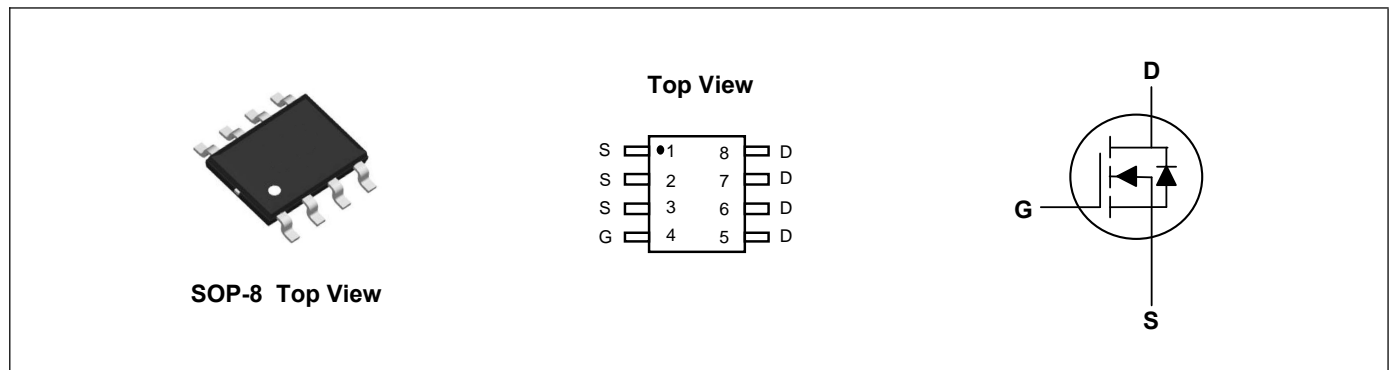
Product Summary



V_{DS}	150	V
I_D (at $V_{GS}=10V$)	5.1	A
$R_{DS(ON)}$ (at $V_{GS}=10V$)	65	m Ω

Applications

- High Frequency Point-of-Load, Synchronous Buck Converter
- Networking DC-DC Power System
- Load Switch



Absolute Maximum Ratings($T_A=25^\circ\text{C}$, unless otherwise noted)

Parameter	Symbol	Rating	Units
Drain-Source Voltage	V_{DS}	150	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current	$I_D@T_C=25^\circ\text{C}$	5.1	A
Continuous Drain Current	$I_D@T_C=100^\circ\text{C}$	3.6	A
Pulsed Drain Current	I_{DM}	20	A
Single Pulse Avalanche Energy ³	EAS	60	mJ
Total Power Dissipation	$P_D@T_C=25^\circ\text{C}$	5	W
Total Power Dissipation	$P_D@T_A=25^\circ\text{C}$	3	W
Storage Temperature Range	T_{STG}	-55 to 150	$^\circ\text{C}$
Operating Junction Temperature Range	T_J	-55 to 150	$^\circ\text{C}$

Thermal Characteristics

Parameter	Symbol	Typ	Max	Unit
Thermal Resistance Junction-Ambient ¹	$R_{\theta JA}$	---	41.7	$^\circ\text{C/W}$
Thermal Resistance Junction-Case ¹	$R_{\theta JC}$	---	25	$^\circ\text{C/W}$

Electrical Characteristics ($T_J=25^\circ\text{C}$, unless otherwise noted)

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V, I_D=250\mu A$	150	---	---	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	$V_{GS}=10V, I_D=5.1A$	---	55	65	m Ω
Gate Threshold Voltage	$V_{GS(th)}$	$V_{GS}=V_{DS}, I_D=250\mu A$	2.5	---	4.5	V
Drain-Source Leakage Current	I_{DSS}	$V_{DS}=150V, V_{GS}=0V, T_J=25^\circ\text{C}$	---	---	1	μA
Gate-Source Leakage Current	I_{GSS}	$V_{GS}=\pm 20V, V_{DS}=0V$	---	---	± 100	nA
Forward Transconductance	g_{fs}	$V_{DS}=5V, I_D=5.1A$	---	12.5	---	S
Total Gate Charge	Q_g	$V_{DS}=75V, V_{GS}=10V, I_D=5.1A$	---	8.5	12	nC
Gate-Source Charge	Q_{gs}		---	2.8	---	
Gate-Drain Charge	Q_{gd}		---	1.9	---	
Turn-On Delay Time	$T_{d(on)}$	$V_{DD}=75V, I_D=5.1A, V_{GS}=10V, R_G=3\Omega$	---	7.5	14	ns
Rise Time	T_r		---	1.4	8.5	
Turn-Off Delay Time	$T_{d(off)}$		---	12.5	21	
Fall Time	T_f		---	2.5	8	
Input Capacitance	C_{iss}	$V_{DS}=75V, V_{GS}=0V, f=1\text{MHz}$	---	550	730	pF
Output Capacitance	C_{oss}		---	62	80	
Reverse Transfer Capacitance	C_{rss}		---	2.5	4.5	

Drain-Source Diode Characteristics

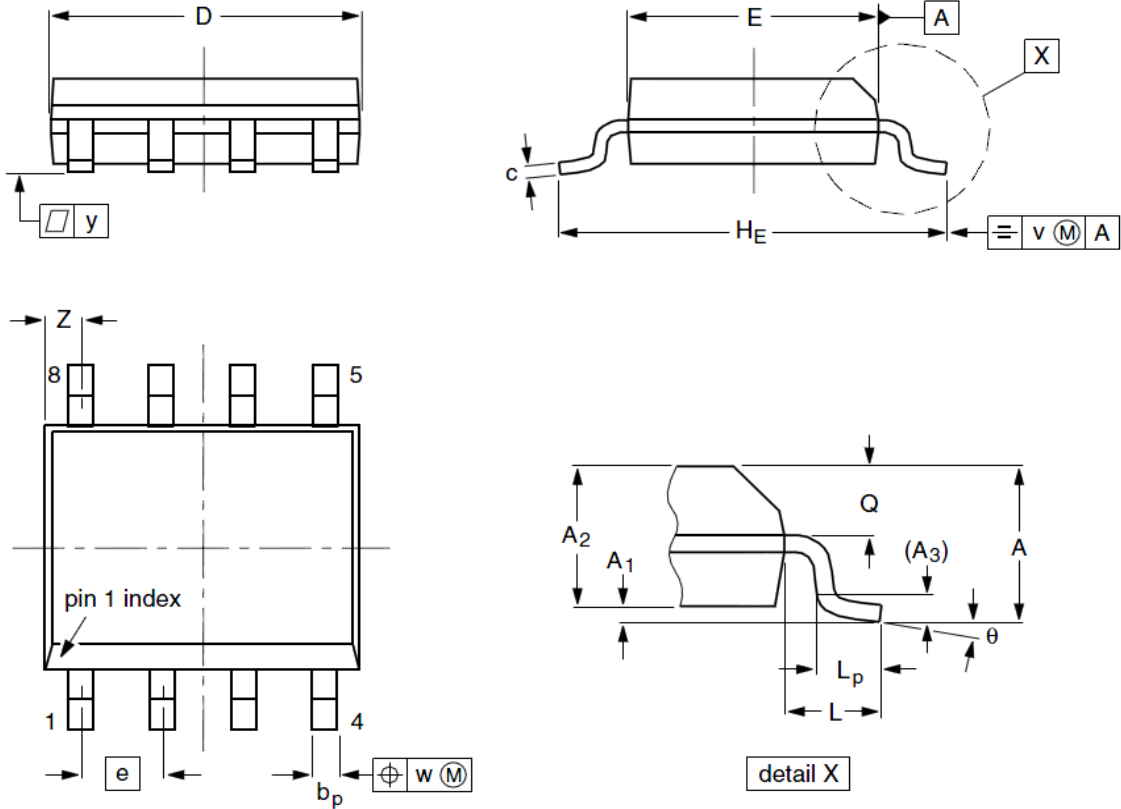
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Continuous Source Current ²	I_S		---	---	5.1	A
Diode Forward Voltage ¹	V_{SD}	$V_{GS}=0V, I_S=5.1A, T_J=25^\circ\text{C}$	---	---	1.2	V
Reverse Recovery Time	t_{rr}	$I_F=I_S, di/dt=100A/\mu s, T_J=25^\circ\text{C}$	---	58	95	nS
Reverse Recovery Charge	Q_{rr}		---	69	110	nC

Note:

- 1.The data tested by surface mounted on a 1 inch² FR-4 board with 2OZ copper.
- 2.The data tested by pulsed , pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$
- 3.EAS condition: $T_J=25^\circ\text{C}, V_{DD}=50V, V_{GS}=10V, L=0.5\text{mH}, R_G=25\Omega$

Typical Characteristics

SOP-8 Package Outline Dimensions



Symbol	Dimensions (unit:mm)			Symbol	Dimensions (unit:mm)		
	Min	Typ	Max		Min	Typ	Max
A	1.35	1.55	1.75	A₁	0.10	0.18	0.25
A₂	1.25	1.45	1.65	A₃	--	0.25	--
b_p	0.36	0.42	0.51	c	0.19	0.22	0.25
D	4.70	4.92	5.10	E	3.80	3.90	4.00
e	--	1.27	--	H_E	5.80	6.00	6.20
L	--	1.05	--	L_p	0.40	0.68	1.00
Q	0.60	0.65	0.73	v	--	0.25	--
w	--	0.25	--	y	--	0.10	--
Z	0.30	0.50	0.70	θ	0°		8°